



*Life Cycle Assessment: automobile
steel case study in Brazil*



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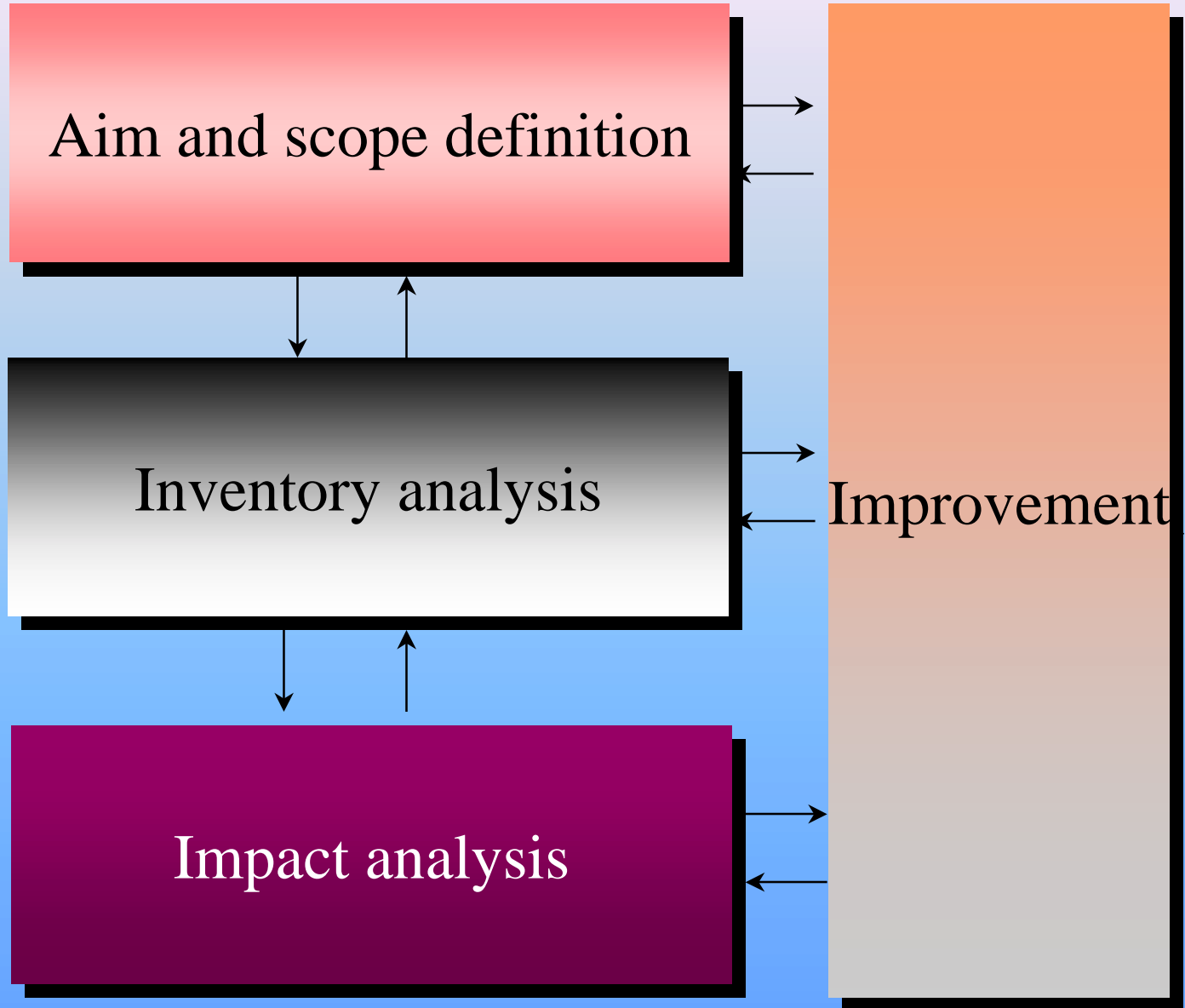


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Life cycle





Aim and scope definition

Product, process or
activity identification

System definition

Region and period

Pollutants identification

Functional unit



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Inventory Analysis

	Collect and store data

	Allocation

	Sensibility analysis



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Impact Analysis

Classification

Characterization

Valoration



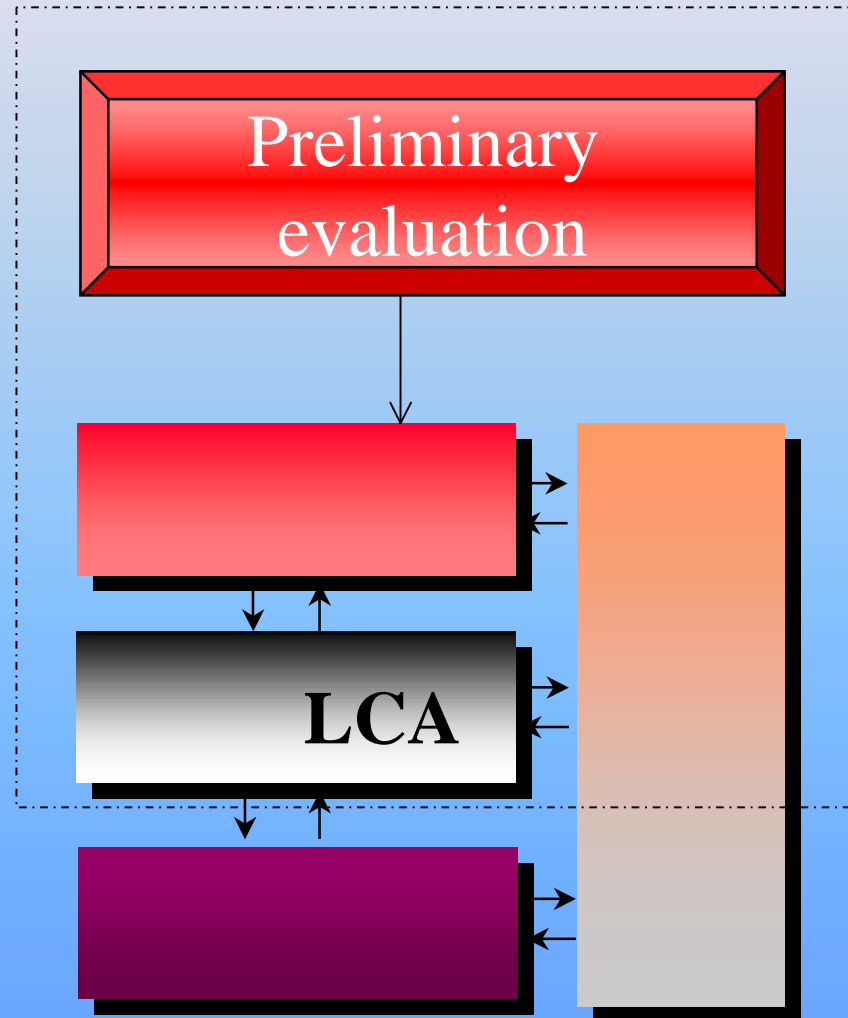
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Case study



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Preliminary evaluation

Automobile life cycle

Materials extraction

Materials fabrication and automobile assembling

Automobile use

Discard (recycling)

Industry action



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Aim and scope definition

Product, process or
activity identification

System definition

Region and period

Pollutants identification

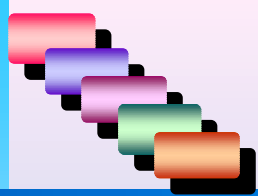
Functional unit



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Steel in automobiles



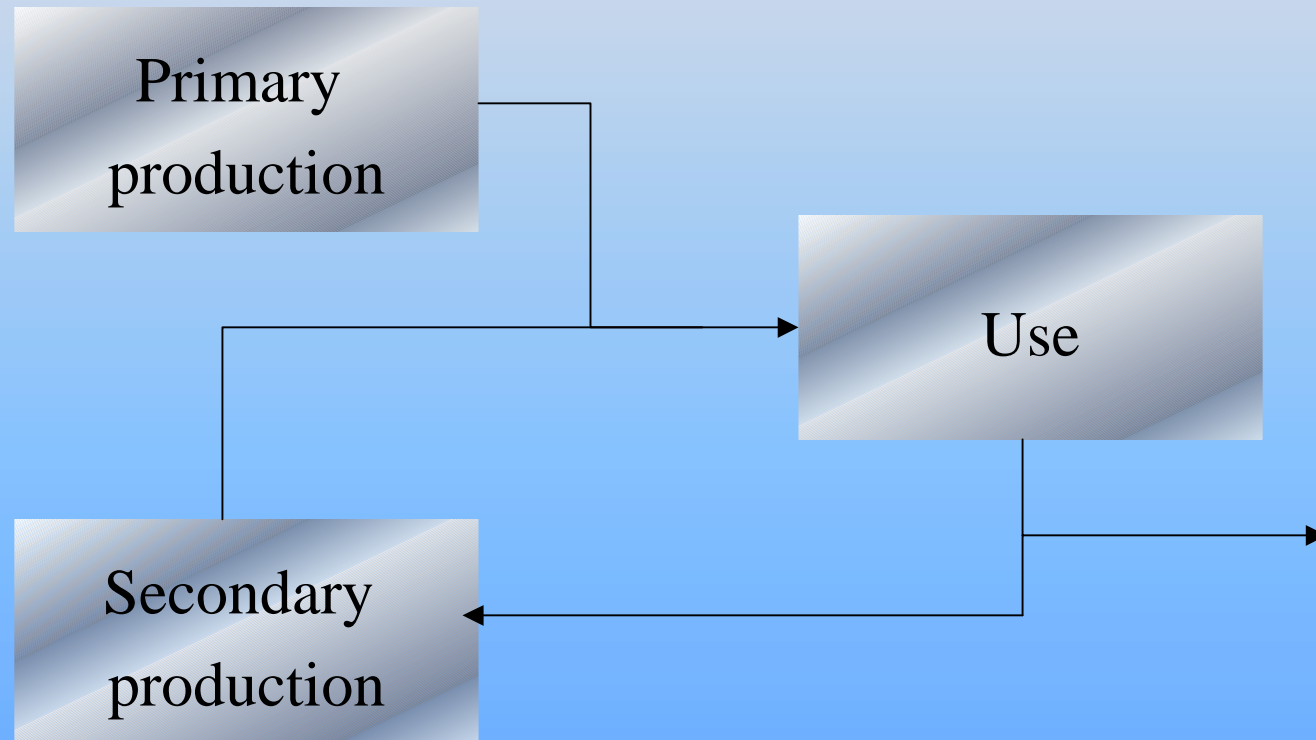
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System definition



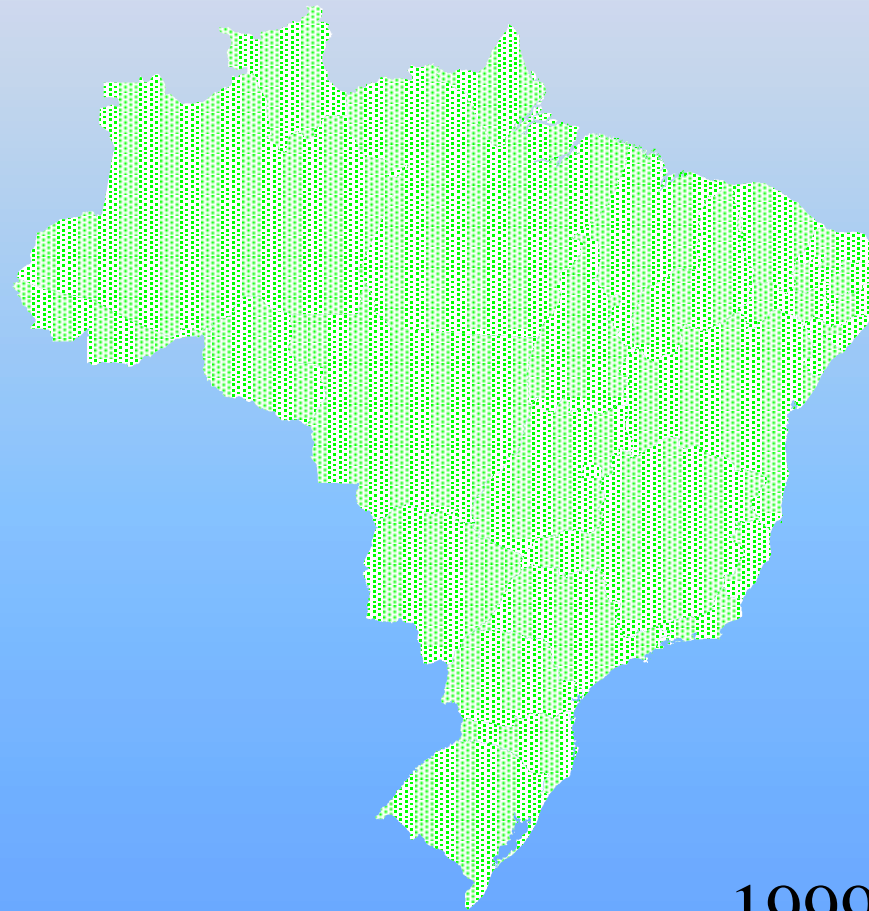
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Region and period definition



1999



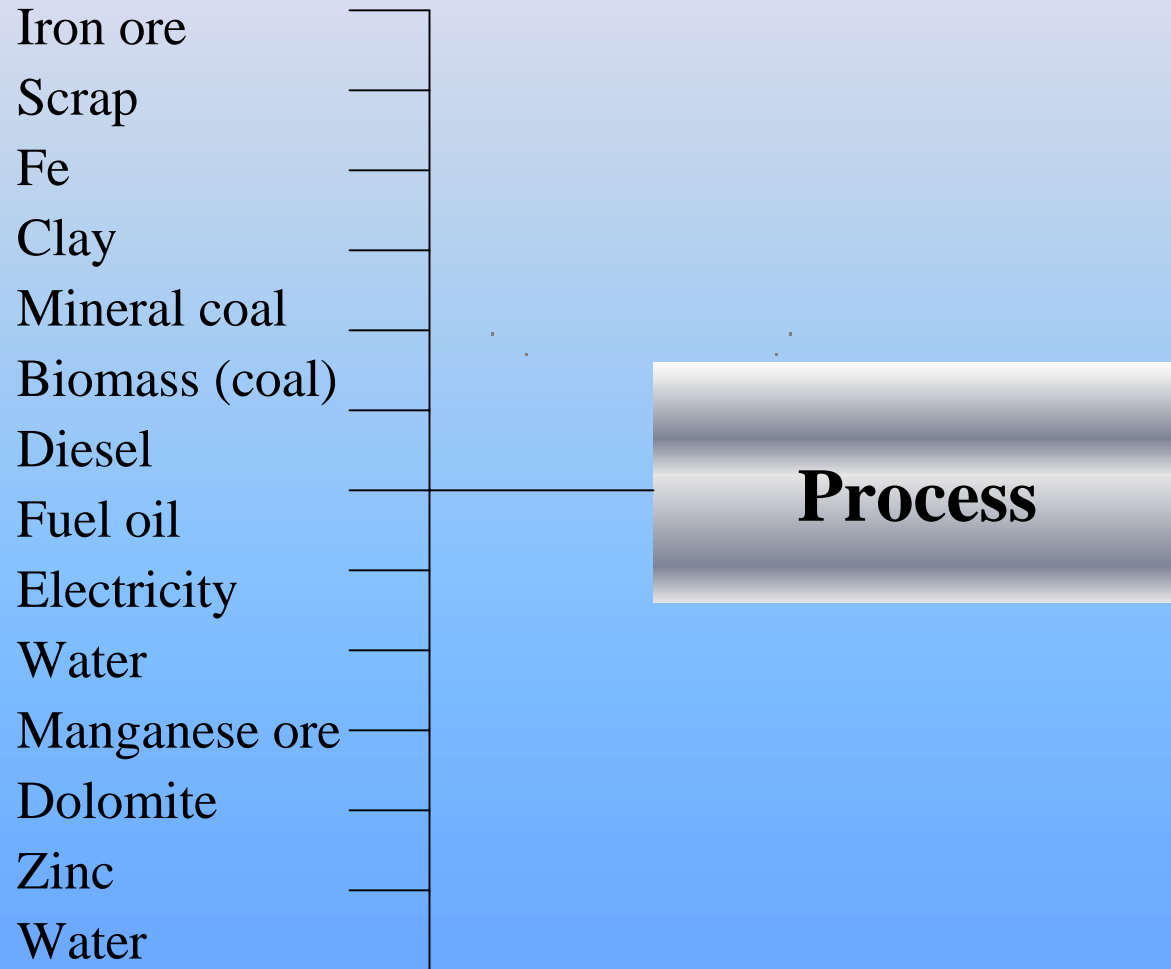
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Environmental aspects - Inputs



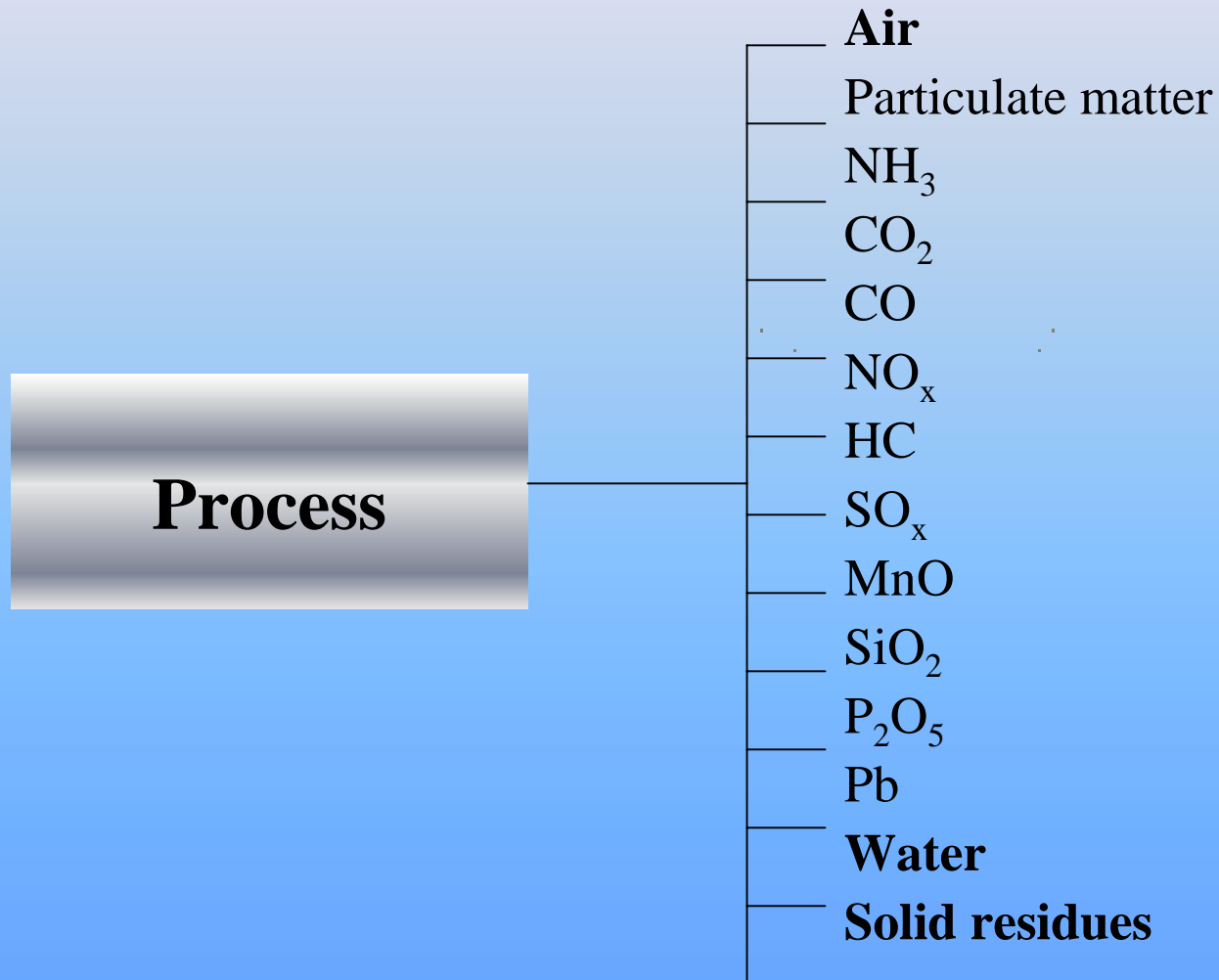
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Environmental aspects - Outputs



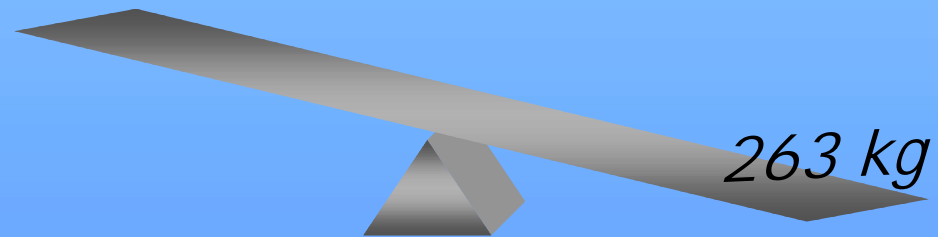
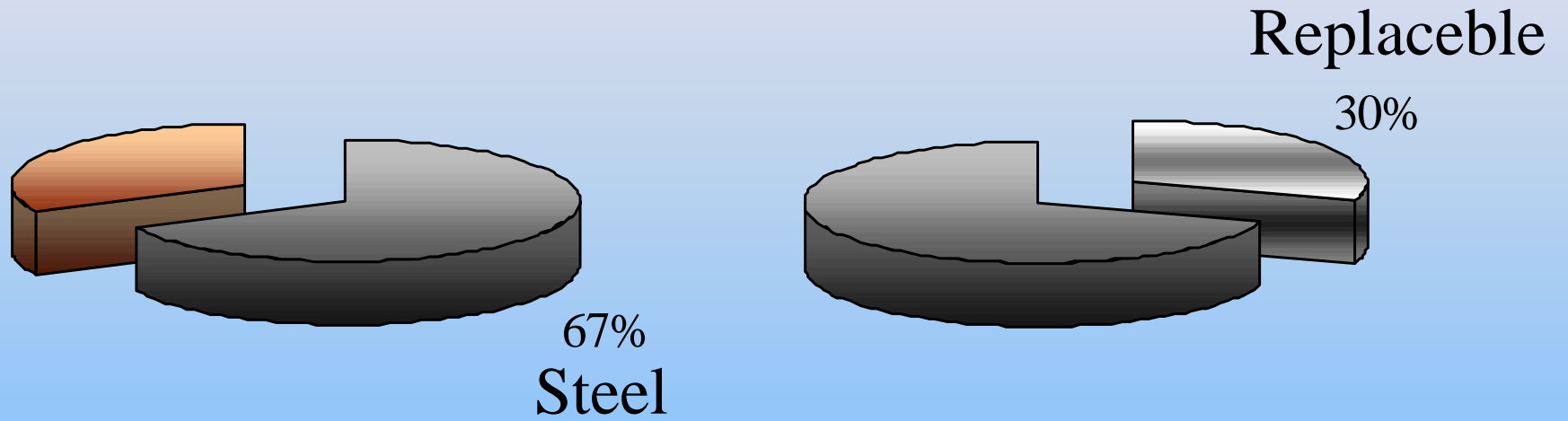
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Functional unit



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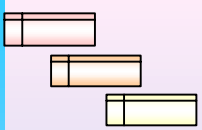
Inventory Analysis

	Collection and storage

	Allocation
Propriety	Physical: mass

	Sensibility analysis
LCPhases	10%





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Data collection and storage

Collect

Inputs

Databases: government and associations

Combustion

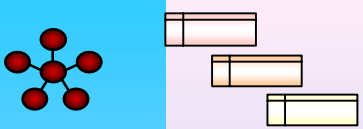
Theoretical

Outputs

Questionnaires and interviews: industries
and associations

Storage

Spreadsheets



Inventory Analysis

Fabrication

SO_x emissions (worst case scenario) 1% de S
CO, MnO, P₂O₅ e SiO₂ Oxidation

Utilization

195.000 km
Energy consumption: average estimatives (alcohol + gasoline)
Pollutant emissions: average estimatives (data from RMSP)
Deterioration factor

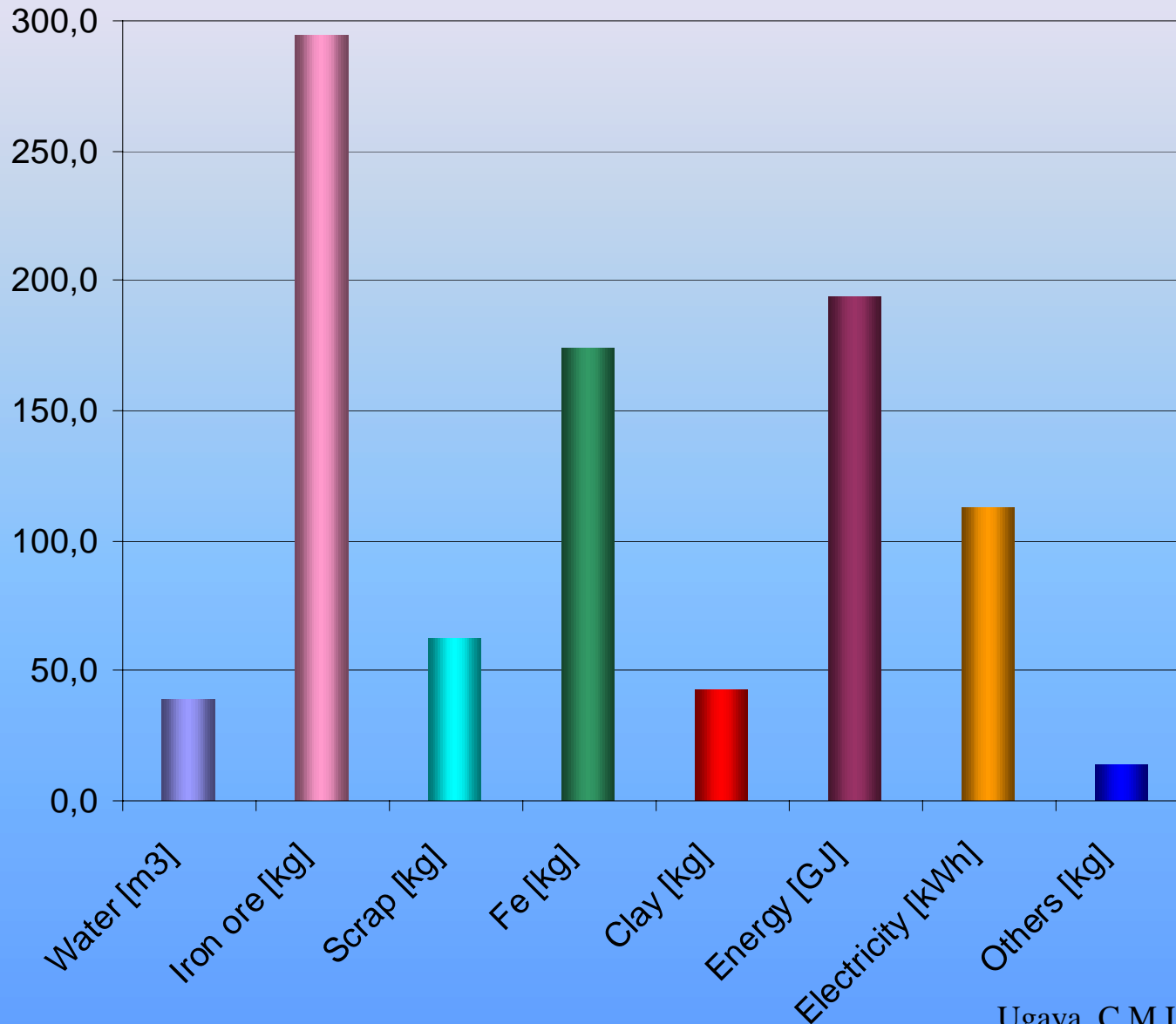
Discard

Average brazilian steel recycling 25%





Interpretation



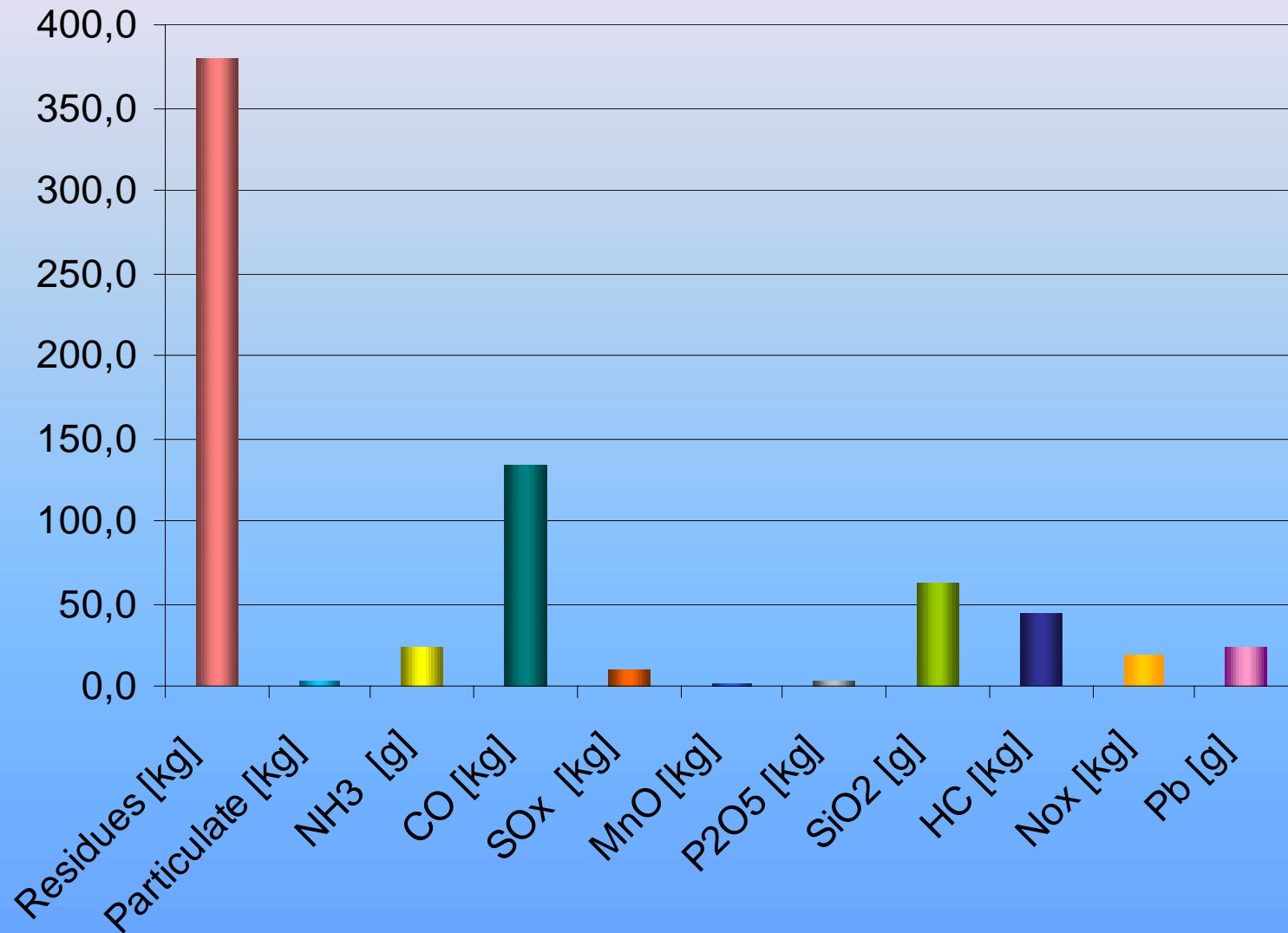
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Interpretation



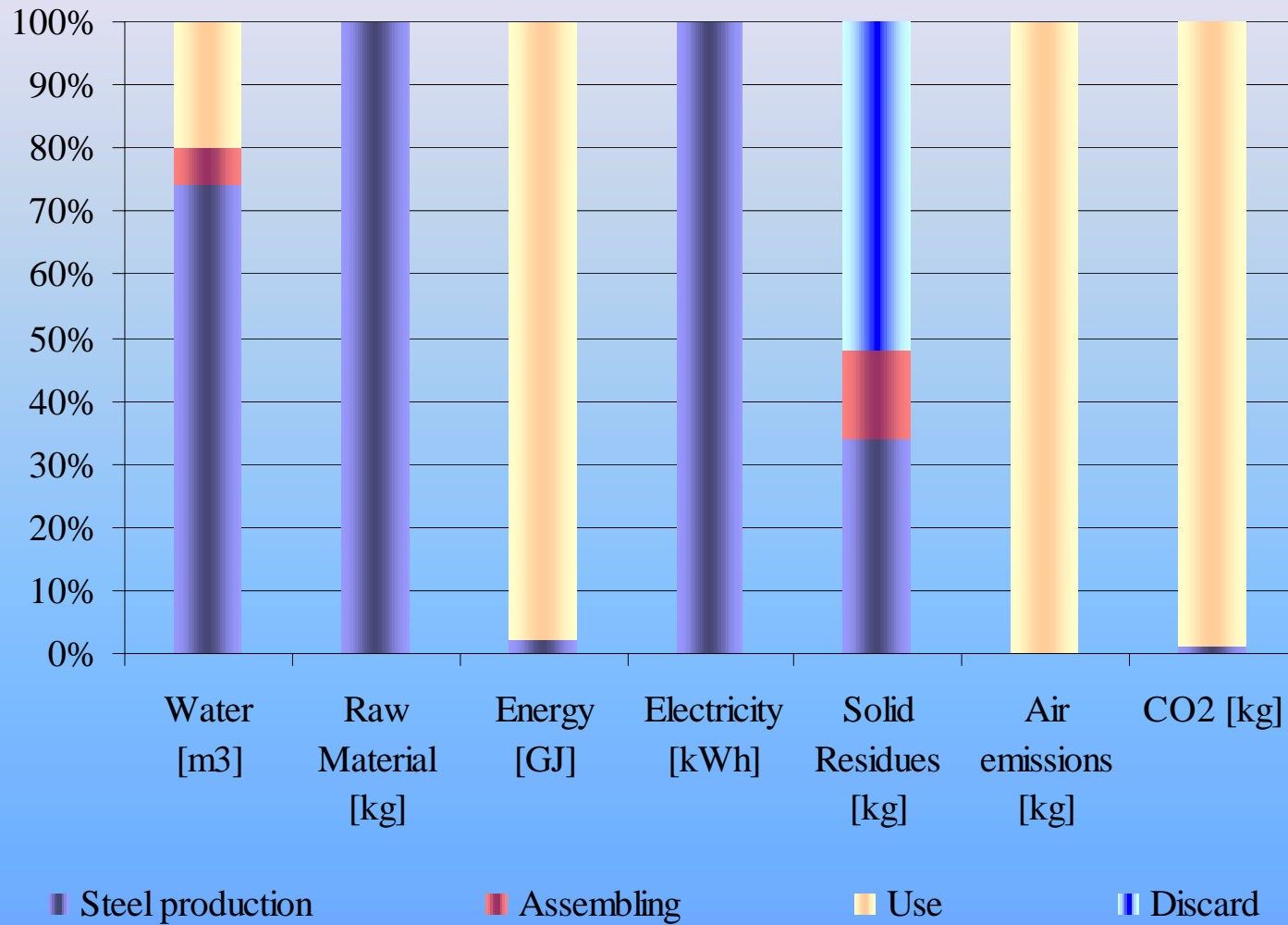
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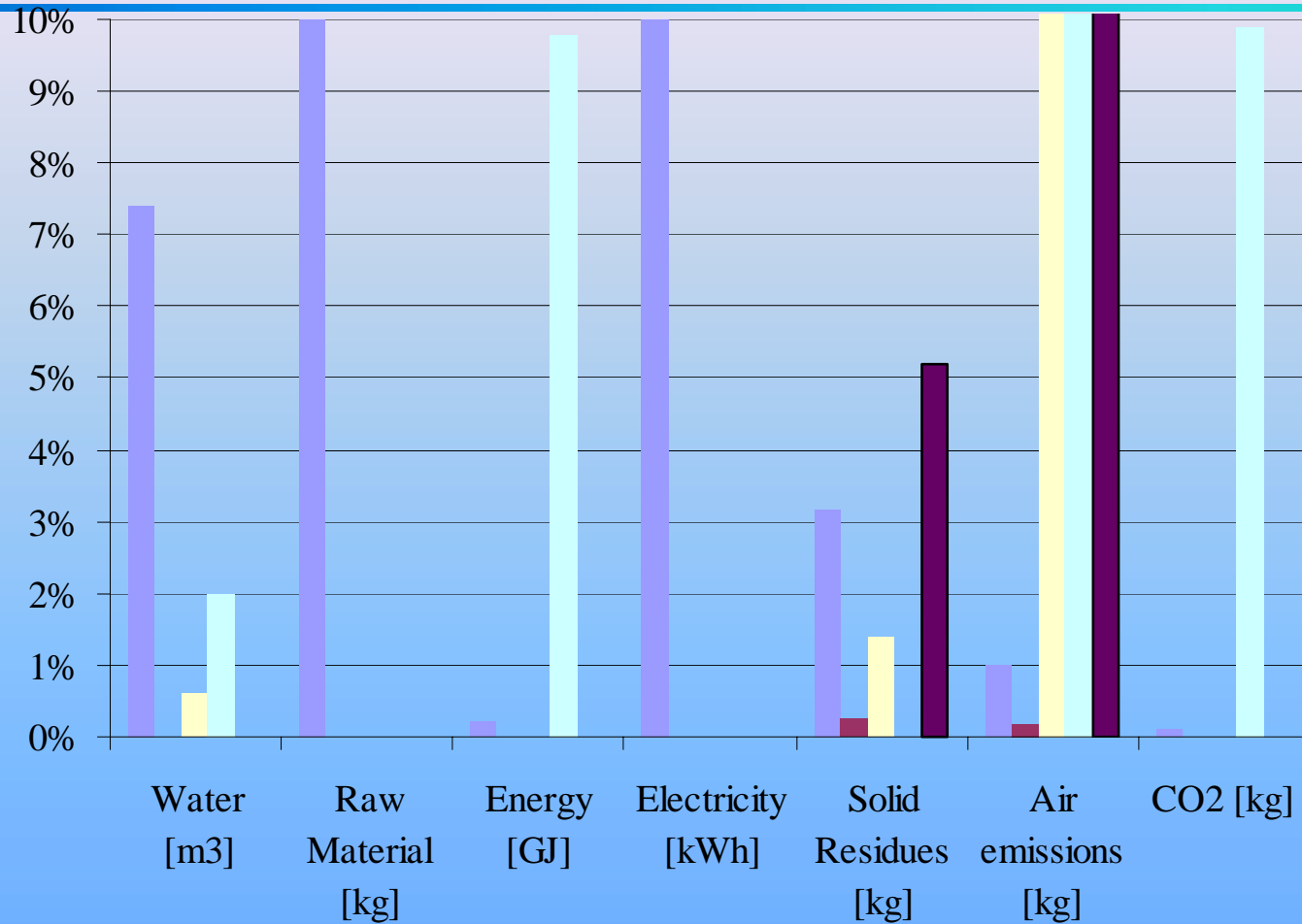


Interpretation





Sensibility Analysis



Primary production Secondary production Assembling Use Discard

